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**AMENDMENTS TO THE CLAIMS**

Please amend the claims as indicated in the following listing of all claims:

1. (Original) An integrated circuit comprising:  
a temperature sensor providing a temperature measurement of the integrated circuit;  
a programmable storage location storing a first temperature limit value, the  
programmable storage location accessible via an instruction executed by the  
integrated circuit; and  
compare logic coupled to the temperature sensor and the storage location to provide an  
indication of a comparison between the temperature measurement and the first  
temperature limit value.
2. (Original) The integrated circuit as recited in claim 1 wherein the integrated circuit  
asserts a first temperature control signal which is supplied on a first output terminal of the  
integrated circuit when the temperature measurement is above the first temperature limit value.
3. (Original) The integrated circuit as recited in claim 2 wherein the integrated circuit  
deasserts the first temperature control signal, which is supplied on the first output terminal of the  
integrated circuit, when the temperature measurement indicated by the temperature sensor falls  
below a programmable second temperature limit value.
4. (Original) The integrated circuit as recited in claim 2 wherein the integrated circuit  
deasserts the first temperature control signal, which is supplied on the first output terminal of the  
integrated circuit, in response to access to a control location in the integrated circuit.
5. (Original) The integrated circuit as recited in claim 2 wherein the integrated circuit  
deasserts the first temperature control signal, which is supplied on the first output terminal of the  
integrated circuit, when the temperature measurement falls below a programmable second  
temperature limit value or when a control location in the integrated circuit is accessed, according  
to a programmable mode of operation.

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6. (Original) The integrated circuit as recited in claim 2 wherein the first temperature limit value is a panic value indicating a temperature limit for safe integrated circuit operation.

7. (Original) The integrated circuit as recited in claim 1 further comprising an addressable storage location coupled to the temperature sensor, the addressable storage location accessible by an instruction executed the integrated circuit and supplying an indication of the temperature measurement on the integrated circuit.

8. (Previously presented) The integrated circuit as recited in claim 2 further comprising: a second output terminal coupled to provide external to the integrated circuit an asserted signal when the temperature measurement indicated by the temperature sensor is above a second temperature limit value.

9. (Original) The integrated circuit as recited in claim 8 further comprising: a second storage location supplying the second temperature limit value; and second compare logic coupled to the second storage location and coupled to receive the temperature measurement of the integrated circuit, and wherein the second compare logic generates a second indication of when the temperature measurement of the integrated circuit is above the second temperature limit value.

10. (Original) The integrated circuit as recited in claim 9 further comprising: a third storage location supplying a third temperature limit value; third compare logic coupled to the third storage location and coupled to receive the temperature measurement, and wherein the compare logic generates a third indication that the temperature measurement of the integrated circuit is below the third temperature limit value.

11. (Original) The integrated circuit as recited in claim 1 wherein the integrated circuit asserts a first temperature control signal which is supplied on a first output terminal of the integrated circuit when the temperature measurement indicated by the temperature sensor is below the third temperature limit value.

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12. (Original) The integrated circuit as recited in claim 1 wherein the integrated circuit is a microprocessor.

13. (Previously presented) A method comprising:  
measuring a temperature of an integrated circuit with a temperature sensor, the  
temperature sensor being a circuit within the integrated circuit;  
comparing the measured temperature to a first limit value stored in the integrated circuit;  
and  
generating a signal on a first output terminal of the integrated circuit according to the  
comparison to control the temperature of the integrated circuit, wherein  
the signal is asserted when the measured temperature is greater than the first limit value,  
and wherein  
the signal on the first output terminal is deasserted when a control location on the  
integrated circuit is accessed or when the measured temperature goes below a  
lower limit value, according to a programmable mode of operation.

14. Canceled.

15. (Previously presented) The method as recited in claim 13 wherein the asserted signal is used to inhibit a cooling device to control the temperature of the integrated circuit.

16. Canceled.

17. Canceled.

18. (Currently amended) The method as recited in claim ~~16~~ 13 wherein the signal is utilized to directly control a cooling device.

19. Canceled.

20. (Previously presented) A method comprising:

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measuring a temperature of an integrated circuit with a temperature sensor, the temperature sensor being a circuit within the integrated circuit;  
comparing the measured temperature to a first limit value stored in the integrated circuit;  
generating a signal on a first output terminal of the integrated circuit according to the comparison to control the temperature of the integrated circuit; and  
accessing a control location in the integrated circuit to cause the signal to be deasserted.

21. (Previously presented) The method as recited in claim 13 wherein the asserted signal causes assertion of an interrupt and wherein a sequence of instructions, responsive to the asserted interrupt, activates a cooling device.

22. (Original) The method as recited in claim 21 wherein an instruction sequence causes the signal to be deasserted.

23. (Previously presented) A method comprising:  
measuring a temperature of an integrated circuit with a temperature sensor, the temperature sensor being a circuit within the integrated circuit;  
comparing the measured temperature to a first limit value stored in the integrated circuit;  
and  
generating a signal on a first output terminal of the integrated circuit according to the comparison to control the temperature of the integrated circuit;  
comparing the measured temperature to a second limit value stored in the integrated circuit; and  
asserting a second signal on a second output terminal of the integrated circuit when the measured temperature is above the second limit value, thereby indicating that temperature has exceeded a safe limit.

24. (Original) The method as recited in claim 23 wherein the second signal is deasserted by accessing a control location in the integrated circuit.

25. (Currently amended) An apparatus comprising:  
a processor including,

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means for measuring a temperature of the processor and providing a measured temperature;  
means for comparing the measured temperature to at least two limit values a first limit value and a second limit value; and  
~~two output terminals on the processor coupled to supply an indication of results the comparison.~~  
means for providing a first signal on a first output terminal of the processor according to the comparison to the first limit value, the first signal to control the temperature of the integrated circuit; and  
means for providing a second signal on a second output terminal of the integrated circuit when the measured temperature is above the second limit value, thereby indicating that temperature has exceeded a safe limit.

26. (Original) The apparatus as recited in claim 25 wherein the apparatus is a computer system and further comprises at least one cooling device, which activates in response to an asserted signal on at least one of the two output terminals.

27. (Original) A microprocessor comprising:  
a temperature sensor providing a temperature measurement of the integrated circuit;  
at least a first and second temperature limit value stored in programmable storage locations in the microprocessor, the storage locations being accessible via software executed by the microprocessor;  
compare logic coupled to the temperature sensor and to the programmable storage locations storing the first and second temperature limit values, to provide respectively a first and second signal indicative of a comparison between the temperature measurement and the first and second temperature limit values; and  
first and second output terminals coupled to provide respectively, the first and second signals.

28. (Original) The microprocessor as recited in claim 27 wherein the microprocessor deasserts the first signal, which is supplied on the first output terminal of

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processor, when the temperature measurement falls below a programmable third temperature limit value, thereby providing a thermostat mode of operation for the first signal.

29. (Original) The integrated circuit as recited in claim 27 wherein the microprocessor includes a software accessible control register controlling operation of the compare logic and the first and second output terminals.